

NOTES ON THE GENUS *STIGMODERA* (FAMILY BUPRESTIDAE).

Together with Descriptions of New Species of and a Retabulation of the Subgenus *Castiarina*.

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Plates xxix. & xxx.

(A). NOTES ON THE GENUS *STIGMODERA* (BUPRESTIDAE).

Since my Revision of this group (1) several corrections have been found necessary. Especially helpful has been my correspondence with Mr. K. G. Blair, of the British Museum, who has given much laborious work, both in examining types and in sending me examples for examination with critical notes. The following notes will clear up some perplexities, and will at least, with some certainty, correct my own mistakes.

Stigmodera Eschsch., stands as in Revision (p. 92).

Subgenus A.: *Themognatha* Sol.

duponti Boisd., is not identical with *Stevensi* Geh. Its brief description indicates *flavocincta* L. & G.; but this is conjecture.

fusca Saund., is distinct from *parvicollis* Saund.

The synonymy of the species (No. 10 of my Revision) seems to me as follows:—

(1) *S. fusca* Saund.; *n. nom.* for *parryi* Hope.
var. *queenlandica* Obenb.

(2) ? Subspec. of (1). *pubicollis* Waterh.
♀ *major* Waterh.
lateritia Saund.

(3) *parvicollis* Saund.
♀ *picea* Kerr.

Mr. Blair's notes (2) vary only from the above in placing *queenlandica* Ob. under (2).

Both Kerremans and Blackburn point out that Saunders' substitution of *fusca* for *parryi* Hope is unjustifiable. (*Nascio parryi* Hope was first described as a *Stigmodera*).

An examination of long series from our Muscums has cleared my own mind on the three species: *fusca* Saund., *pubicollis* Waterh., and *parvicollis* Saund. The following notes may help the student to distinguish them:—

S. fusca Saund. Head bronzy, lightly pubescent. Pronotum red, or reddish brown, without metallic lustre or pubescence; underside coppery to dark bronze, sparsely or not pubescent. Head and pronotum coarsely, irregularly rugose-punctate, the latter with large smooth spaces between punctures.

Pronotum widest at base—here wider than elytra (as in Saunders' figure, also in Obenberger's figure of *queenlandica*), thence arcuately converging to apex, with some crenulations at margin, posterior angles subrectangular, base feebly sinuate, without excisions. Length to breadth as 10:19.

Elytra regularly striate, intervals sharply convex, coarsely and rather closely punctate, giving a more opaque surface than with *parvicollis*. Sterna and sides of abdomen coarsely rugose-punctate, middle of abdomen varying nitid and laevigate.

(1). Trans. Roy. Soc. S. Aus., 1916.

(2). Ent. Monthly Mag., lxx., 1929, 201-203.

9 examples. S. Aus.	6.
W.A.	2.
No label	1.

Dimensions: 29-42 x 12-18 mm.

S. pubicollis Waterh. only differs from *fusca* in colour and clothing. Head, pronotum and underside coppery to dark bronze, elytra reddish brown to dark brown. Pronotum and elytra with or without narrow red margin. [Of 20 examples 13 are with, 7 without this margin]. Clothing of head, pronotum and underside varies from very long and dense to moderate, of a pale fawn colour beneath, more silvery above.

20 examples. N.W. Victoria	3.
S. Aus.	2.
W. Aus.	12.
No label	3.

Dimensions: 27-41 x 11-17 mm.

While extreme forms can be readily distinguished from *fusca*, the pubescence seems to be easily abraded. There is thus some reason for considering this as a western subspecies of the South Australian *fusca* Saund.

S. parvicollis Saund. Head and pronotum reddish brown to bronzy black, or with varied amounts of each. Elytra castaneous to reddish brown, underside dark bronze or black.

Head generally pubescent, strongly, not uniformly punctate.

Pronotum rugose-punctate, coarsely so at sides, with smooth raised vermiculations, sides crenulate, disc with a more or less smooth middle line (often vague); widest about middle, post angles acute, base sinuate, with marked excisions. Length to breadth as 4:7.

Elytra nitid, deeply striate, intervals rounded, convex, irregularly and sparsely punctate, showing less irregular rugosity at humeral and sublateral region than is usual.

Prosternum transversely wrinkled in front, coarsely punctate behind, metasternum coarsely, closely punctate. Abdomen very nitid and sparsely punctate in middle—often widely laevigate—coarsely and irregularly punctate at sides.

27 examples. South Aust.	17.
West Aust.	4.
N.W. Vict.	3.
N.S.W. (Broken Hill)	1.
No label	2.

Easily distinguished from *fusca* and *pubicollis* by the excised and sinuate base of prothorax, more nitid surface, wider striae and less punctate elytral intervals.

cyaniventris Kerr. In my notes, after an examination of type in 1922, considered as synonymous with *variabilis* Don., Mr. Blair has it under *latithorax* Thoms.

viridicincta Waterh. The type of this, in Mr. Blair's opinion, in which I concur, is a small variety of *S. donovani* L. & G., in which the green sutural strip is wider than usual. The example, however, which Waterhouse described as *viridicincta* var. seems to me a distinct species and identical with *carpentariae* Blkb. The synonymy thus would appear.

S. donovani L. G. = *viridicincta* Waterh. (type).

S. carpentariae Blkb. = *viridicincta* Waterh. var.

jansoni Saund. was erroneously placed as a synonym of *donovani* L. & G. in my Revision—a mistake corrected in my Check List. It is more elongate than *donovani* and has its underside metallic green. I now think it

probable that *viridicauda* Cart. is a form of *jansoni*. The unique type is in Stockholm Museum.

quadrispilota Saund. is a good species, distinct from *mittelli* Hope.

Mr. Blair writes "unique type has thorax dark greenish bronze with sides yellow, but no difference in colour of side parts of dark patch, sides have no marginal thickening (bourrelet) as in *variabilis* or *mittelli*, a small yellow spot in middle of base. Elytra with apices rounded, no emargination as in *mittelli*, underside dark bronze, no pale sides to segments, prosternum wide and feebly convex between coxae (furrowed in *mittelli*), 5th ventral segment very feebly emarginate, 6th without medial longitudinal depression."

Two examples in the Macleay Museum (also in Melbourne Museum) exactly fit this description. The elytral dark spots tend to coalesce into short fasciae.

Since publishing my Revision, in 1916, twelve names have been added, six each by Obenberger and myself. Of Obenberger's species *nickerli* and *strandii* are, I consider, forms of *Castiarina maculiventris*, and cannot, if I am correct, be included under Themognatha. The others, *queenslandica*, *desperata*, *mrazi* and *jakovlevi* are considered as synonyms of recorded species. Of my own species *viridicauda*, *praeterita*, *ducalis*, *miranda*, *marginalis* and *particollis*, the first may prove to be a variety of *jansoni* Saund., the distinction of which from *donovani* was at the time not clear to me.

praeterita may be considered as a well defined subspecies of *affinis* Saund. without red markings.

miranda may, with further material, be found to be a colour variety of *ducalis*. The structural characters are similar.

particollis. Mr. Blair suggests the possibility of this being a variety of *caroli* Blkb., a very variable species. Of 5 examples of *caroli* before me, three have the pronotum red, with margins only narrowly bronze, one has the pronotum wholly bronze, the fifth has the pronotum partly bronze as in *particollis*, but the rest of upper surface red (testaceous in *particollis*). In one example only is there a short interrupted fascia and sutural spot black. All have the apices narrowly black or blue-black. The structural characters support Mr. Blair's suggestion.

wimmerae Blkb. This also is another var. of *caroli* Blkb., which by right of priority must have precedence. The synonymy running as follows:—

- S. (Themognatha) wimmerae* Blkb. = *capucina* Blkb. (var. 1).
- = *caroli* Blkb.
- = *particollis* Cart. (var. 2).

(B). SUBGENUS CASTIARINA.

The following retabulation includes species described since 1916, while making necessary corrections:—

Further study also informs me of the great complexity in variation of certain species, though such variations do not apparently occur in a large—probably the greater—number of species. The variations of pattern may be generalized under two heads.

(1) Loss of certain markings. (2) The spreading of one colour—often metallic green or blue—over a large part or the whole of the elytra. Examples of (1) are var. *tiramosa* Thoms. of *simulata* L. & G.; var. *leai* Cart. of *dimidiata* Cart.; var. *semisuturalis* Saund. of *ignota* Saund. For examples of (2) vide my 1916 Revision, p. 81. A rare variation is structural—that of the elytral apices, on which I commented (l.c., p. 82). Lately an examination of *S. impressicollis* MacL. has shown certain N. Queensland examples (the type from the Manning River, N.S. Wales, is clearly bispinose) to be distinctly trispinose; the two interior spines corresponding with the bis-

pinose examples, while the 2nd elytral costa is produced to form a 3rd spine. The examples are otherwise indistinguishable. This form needs distinction, for which I suggest the name *trispiculis* n. var. Again in a series of *cineta* Blkb.,—clearly synonymous with *flaviceps* Cart.—variations occur (1) in pattern, from loss of dark portions, (2) in the absence of frontal yellow spot. (Four specimens from Waneroo and Moore River, W.A., are only distinguishable from others in having the forehead a fiery copper colour). (3) In having trispinose examples. Of eleven examples before me two have trispinose apices, the rest being distinctly bispinose. Of two examples from Tammin, W.A., one has three, the other two spines on each apex. Such instances are rare; the apical structure being one of the most constant and reliable characters for specific distinction, I suggest the varietal name *cupriceps* for (2) and *tridens* for (3).

The predominant use of colour markings in the tabulation is due to the following considerations. (1). The table is intended for use in museums and by collectors who need a ready guide for determinations. The colour characters of a species are so frequently identical as to be, on the whole, the simplest criterion of distinction, though the expert will not take this as final. It is a first aid diagnosis that must, for real accuracy, be supplemented by other character considerations. The weak point of any table is the inter-relation between different species associated with any one selected character. Thus in the following the *bifasciata*, *kirbyi* and *scalaris* groups each contain a few species that might, in certain forms, be transposed. Here I can only give my experience as to the commoner form, and have inter-polated a few notes that may be helpful, where there is frequent variation. An asterisk before a name denotes a species unknown to the author in nature, but is included on its description.

A nearer approach to finality, in doubtful cases of identification, could—and should—be attained by authors practising a free interchange, or loan, of specimens. The British Museum is the depository of the greater number of types in this genus. It would not be difficult for European authors to submit their specimens to that institution for comparison before adding more names to the long list of synonyms. Varietal names only deserve publication in two cases: (1) Special local forms of common occurrence, subspecies; (2) notably distinct forms that possess some taxonomic value or would be likely to be considered as distinct species were intermediate forms unknown.

With regard to (1) the term subspecies is helpful and correct if—and only—when applied to a distinct geographical race, that is more or less constant in character in a region. Its loose application by cabinet entomologists without field experience is misleading. The existence of such forms is one of the clearest indications of the actual process of evolution. The close study of a large insect genus, with many common and widely spread species, like Castiarina is one of the most impressive object lessons in genetics. Good examples of subspecies are *C. rufipes* MacL. and *C. malleana* Cart. (the former redescribed by Obenberger as *stigmaticollis*).

While it is possible that hybridization occurs with Stigmodera, there is at present no evidence of this. Only experiments under close observation in captivity can educe such evidence. Cases of different species being found "in cop" do not afford evidence of either (1) specific relation, or (2) of fertilization. During the "angophora" season round Sydney I have more than once found the larger species *variabilis*, *macularia* and *suturalis* thus paired. I also have a pair of Castiarina taken "in cop" by a very accurate observer, Mr. E. Sutton, of Stanthorpe, Queensland, of which the ♂ is *decemmaculata* Kirby and the ♀ is *punctatosulcata* Saund.

Castiarina maculiventris Macl. The sexual coloration here is strongly shown and constant. ♂. The only dark marking on the elytra is the suture, this sometimes widening into a preapical spot; the abdomen wholly yellow. ♀. There are generally two wide fasciae and a large triangular apical or subapical, narrowly produced to apex mark, besides the suture dark blue; the premedial fascia is short, interrupted at suture and variable, the abdomen more or less dark green, with yellow that vary from wide transverse areas to examples in which only a few lateral spots occur. In both sexes the hinder margins of elytra are widely red. I have before me 9 ♂♂ and 9 ♀♀; 2 from Kuranda, the rest from Milmerran, S.Q. As already pointed out, *S. nickerli* Obenb. and *S. strandi* Obenb. are evident synonyms, the former representing the female, the latter the male form; both erroneously described as *Themognatha*.

S. straminea Macl. = *cara* Blkb. var. 1 = *placens* Kerr. var. 2.

This presents one of the most remarkable cases of pattern variation in the genus, and one that has been unmistakeably proved by two instances of field observation by Mr. E. Sutton, of Stanthorpe, and by myself. Four examples (clearly *cara* Blkb.) taken at Stanthorpe, Queensland, vary, as follows: In three the pronotum and sternum are "splendide cuprea," as in Blackburn's description; in the other example they are violet coppery. In two the elytra have the two fasciae and apical mark dark green as in description; in a third example the premedial fascia is absent, while in the fourth the only dark marks on the elytra are two spots—one on each side, representing the remnants of the postmedial fascia. In *placens* Kerr. the golden bronze of the prothorax is replaced by "violacé pourpré à reflets cuivreux." Recently I took, in the Mullaley district of N.S.W., 30 examples, which show similar variation; the extreme form (elytra with two spots only, sometimes with apex dark) being much the commonest, no less than 27 out of 30 examples being so marked. This form is identical with the type of *S. straminea* Macl., showing similar sculpture and structure. It is, perhaps, unfortunate that the more distinctly "patterned" form should form the variety, but the claims of priority are undoubted.

S. bifasciata Hope (Gray's Zool. Misc., 1831, p. 25) = *bicincta* Boisd. = &c. This name has been overlooked, probably because the species was erroneously described as from Nepaul. [*Chalcopterus cyanopterus* Hope was similarly treated in the same work]. This necessitates a new name for *bifasciata* Saund., for which I propose the name *brevifasciata* n. nom. *S. cupreoflava* Saund., *violacea* Macl. and *equina* Blkb. are distinct species, erroneously placed as synonyms in my former lists. *Violacea* is very close to *cupreoflava* in colour and pattern. A close comparison of Macleay's type with S.A. examples of *cupreoflava* show a narrower, more cylindric form, more convex prothorax, rather dark colour, the violaceous tints prevailing over the coppery, the elytral punctures rather stronger, its pattern difference as in my table infra.

obliquefasciata Obenb. seems inseparable from *violacea* by description.

equina Blkb. differs more widely in its smaller size and more pronounced apical armature, besides the absence of violet from the pronotum, and stronger pubescence of the underside.

decepiens Westw. varies widely in colour from those in which the elytra is largely yellow; to those in which it is largely (or wholly) black. (var. *octocostata* Cart.).

bimaculata Saund., *punctiventris* Saund., *guttata* Blkb. and *igneae* Blkb. are here considered as four distinct species, as distinguished in my table, the first two apparently rare in collections.

octospilota C. & G. is as variable, as it is widely spread. The subspecies *rufipes* MacL. occurs in North Queensland.

A second subspecies common in W.A. that I have not seen elsewhere has the loss of pattern strongly marked, the dark area of elytra being limited to humeral mark, suture, margins, and a postmedial fascia.

I have variations of *octospilota* from S. Queensland, in which the whole pronotum and the greater part of the underside is dark.

picta C. & G., *S. S. malleana*. Mr. J. E. Dixon has taken a considerable number of species at L. Hattah., N.W. Victoria, that can, I think, only be considered as a subspecies of *picta*, though with some marked and constant colour distinctions. The disc of pronotum and legs are peacock blue, the yellow colour is more predominant on the elytra than usual, the basal pair of yellow spots being elongate and wide, often connected at the base, with lateral yellow marks. I propose the name *malleana* for this.

decemmaculata Kirby, is also subject to great variation, and is very widely distributed. Examples from Stanthorpe (Q.) have a brassy pronotum, with bright green elytral markings.

crocipennis C. & G. Hope MS.) = *parallela* Saund. = *nigricollis* Waterh. This correction, long overdue, has been pointed out by Mr. Blair.

armata Thoms. I see no reason for distinguishing my *theryi* from this. *coccinata* Hope, *guttaticollis* Blkb. A rearrangement of these, with synonymy, is due to a comparison with types by Mr. Blair.

signata K. Wrongly determined by me for examples from N.W. Victoria. (Now considered as *distinguenda* Saund, var.). Mr. Blair's note on the type is "quite distinct and appears to me to come near *pallidiventris* C. & G."

rotundata Saund. = *moribunda* Saund. The latter is a variety having its pattern sub-obsolete. I have seen others like it from Sydney.

The following are new.

STIGMODERA (CASTIARINA) EBURNEA n. sp.

(Plate xxx., fig. 9.)

Oblong; head golden green, pronotum golden bronze, greenish at base, with an eburneous spot at margin of basal third; continued beneath over the greater part of prosternal flanks; scutellum green; elytra pale testaceous, with the following markings metallic, brownish black; a sub-obsolete basal margin, a small longitudinal mark on each lateral margin, slightly before middle, a small diamond shaped spot on suture between these, the apex narrowly and the suture narrowly to a 2nd spot equidistant from the first spot and the apex. The whole abdomen and a considerable area of the metasternum, and the prosternal process pale testaceous, the remaining areas of underside, legs and antennae green, tibiae bluish green.

Head with shallow excision and medial sulcus; closely punctate.

Prothorax widest at middle; apex arcuate, anterior angles acute and little produced; base lightly bisinuate, with a shallow medial and two wide foveate punctures at the subrectangular hind angles; these extending from the triangular basal excisions; sides well rounded, very slightly sinuate behind; disc rather convex, strongly and rather closely punctate, a little rugose towards sides, a smooth medial line on basal half.

Scutellum subcordate, convex, laevigate.

Elytra sides lightly sinuate, rather strongly compressed before middle, apices wide, subtruncate, without a sign of excision, the margins entire; striate-punctate, intervals nearly flat except at sides; those from the 3rd outwards showing each a line of shallow punctures; striae well marked, seriate punctures irregularly spaced. Underside finely punctate, the metallic areas rather more strongly so, prosternum with sparse recumbent hair.

Dimensions: 13 x 5 mm.

Habitat: Swan River.

A single example, ♂, in the British Museum is remarkable for the prevalence of the pale yellow marking on the underside. The colour of this, as also of the elytra, is very like old (not too old) ivory. The pronotal spot is a narrow extension of the prosternal yellow in an oblique backward direction. It is quite distinct from any recorded species, with some suggestions of *luteipennis* C. & G. Holotype in the British Museum.

STIGMODERA (CASTIARINA) PERLONGA n.sp.

(Plate xxx., fig. 8.)

Elongate, sharply attenuate behind; head, pronotum, underside and elytral markings nitid dark blue, appendages violaceous; elytra yellow with narrow basal margins, suture irregularly but widely, post medial fascia, extending to sides and narrowly connected with sutural mark, and a pre-medial oval patch narrowly extended at suture to apex dark blue.

Head deeply channelled between eyes, rather short, little produced in front; finely and closely punctate.

Prothorax convex, widest at middle, apex lightly bisinuate, anterior angles acute and produced, base rather strongly bisinuate, hind angles acute; sides well rounded, sinuate behind; disc with a subsulcate medial line at basal half, terminating in a small fovea; without apparent excisions at base, a wide lateral depression near hind angles; disc rather evenly punctate, the punctures small and round, larger and more distant laterally.

Scutellum subcordate, deeply concave.

Elytra very little wider than prothorax and three times as long; apices narrowly obliquely excised, each apex forming a single fine tooth; margins with a few strong denticles near this point, otherwise entire; striae punctate, the seriate punctures distinct and regular; intervals very lightly convex except near apex and very finely and sparsely punctate except on shoulders. Underside glabrous, prosternum densely, metasternum and abdomen very lightly punctate.

Dimensions: 13 x 4 mm.

Habitat: ? Sydney. (Wilson).

A single example (? ♀) in the British Museum is labelled Sydney, Wilson, with a 2nd label Saunders Coll., but I have never seen anything like it from the Sydney region. The elytral pattern is somewhat like that of *campestris* Blkb.; the apical structure is like that of *recta* Saund. or *trifasciata* C. & G., though more narrowly excised than the latter. In form of prothorax and general shape it is very close to *gracilior* Cart. from Queensland. Holotype in the British Museum.

STIGMODERA (CASTIARINA) DISCOIDEA n.sp.

(Plate xxix., fig. 2.)

Elongate ovate, rather flat. Head, pronotum, underside and appendages brassy bronze green in ♂, sombre bronze green (in places bluish) in ♀, elytra dark yellow (scarcely orange), in the ♀ with suture, a large patch covering the basal third, not quite extending to sides, a wide postmedial fascia also not quite reaching sides and a triangular subapical patch, sometimes narrowly extended to apex dark green; ♂ with basal margin, suture and variable, or obsolete subapical patch only, dark green.

Head with usual excavation, closely punctate.

Prothorax widest at middle, apex lightly, base moderately bisinuate, with small excisions, sides moderately rounded without sinuation, anterior angles produced and acute, hind angles rectangular; disc closely punctate,

punctures fine in middle, coarser at sides, sparse at base, a smooth medial line shown near base.

Scutellum scutiform, concave.

Elytra very lightly enlarged at shoulder and constricted behind, apices rounded and unarmed, margins entire; striate-punctate, intervals flat, except 1st (scutellary), 3rd and 5th at base, and all convex at the apex; transversely wrinkled and sparsely punctate.

Prosternum finely, the rest of underside even more finely and closely punctate, and very sparsely pubescent.

Dimensions: 15-17 x 6-7 mm.

Habitat: New South Wales, Blue Mountains (G. E. Bryant and the author); Wahroonga and Lindfield (the author).

Nine examples (4 ♂♂, 5 ♀♀) are before me. I have taken many others that have been confused with the common *undulata* Don. Recently Mr. Blair has correctly refused to admit this determination, and a close examination confirms the distinction. The loss of pattern, hitherto considered as a varietal form is associated with all the males, besides the brighter, more brilliant colour of pronotum and underside noted above. The pattern of the female is very similar to that of *ornata* Blkb. or of *grata* Saund.

Besides pattern distinction, the following differences may help to separate it from Donovan's species:—

	<i>undulata</i> Don.	<i>discoidea</i> ♀.
Colour,	bronzy, often brassy, green.	more sombre, bluish at sides of pronotum.
Prothorax,	hind angles acute.	rectangular.
	discal punctures larger.	smaller.
Elytral intervals,	lightly punctate.	cross wrinkled with a few punctures.

Holotype ♀ and allotype ♂ in Coll. Carter. Paratypes in British Museum and National Museum, Melbourne.

STIGMODERA (CASTIARINA) DOMINA n. sp.

(Plate xxix., fig. 4.)

Elongate ovate, convex. Head, pronotum, underside and appendages dark olive green, elytra testaceous with narrow basal margin, narrow post-medial fascia, enlarged at suture, extending to sides and narrowly connected along suture with small triangular apical mark dark green (or greenish black).

Head deeply excavate, rather coarsely punctate; apex and base bisinuate, the former unusually prominent in middle, the latter without distinct excisions; all angles subacute, sides subparallel on basal half, thence arcuately converging to apex without sinuation; disc strongly, rather rugosely at sides, punctate, more finely on medio-apical area, a smooth medial line near base and a few small laevigate areas elsewhere.

Scutellum scutiform, concave, laevigate.

Elytra scarcely enlarged at shoulders or constricted behind; slightly widest behind middle, rather strongly attenuate behind, apices obliquely lunate with strong external tooth; margins entire, striate-punctate, striae punctures large except near suture, intervals convex throughout, strongly so at sides and apex, and bearing a few small punctures.

Prosternum coarsely, metasternum moderately, abdomen finely punctate and sparsely pubescent.

Dimensions: 15 x 6 mm.

Habitat: Queensland.

A single ♂ example in the Melbourne Museum belongs to the *andersoni* group, so far as pattern goes, but is more robust, convex and attenuate

than *andersoni* C. & G., being nearer the form of *trifasciata* C. & G. The narrow fascia and apical mark, combined with the dark green prothorax and underside distinguish it from others of its group. Holotype in the National Museum.

STIGMODERA (CASTIARINA) INTERSTITIALIS n. sp.

(Plate xxix., fig. 1.)

Narrowly ovate; head, antennae, pronotum and underside clear, dark green, subnitid above, very nitid beneath, with fine recumbent pubescence, legs blue; elytra purple (coppery on raised intervals) with the following markings yellow; a straight basal and premedial fascia, connected at sides and interrupted at suture, and a narrow arcuate preapical fascia extending along sides, about its own width, nearly to apex.

Head excavate and channelled, finely punctate.

Prothorax convex, widest near middle, apex arcuate, base rather strongly bisinuate, excisions marked by small foveae; sides evenly rounded, anterior angles obtuse, posterior acute; disc evenly, densely and finely punctate; medial sulcus clearly impressed and terminated behind in a large fovea.

Scutellum transverse, oval and concave.

Elytra rather abruptly widened at shoulders and well constricted behind these; apices subbidentate, with rather wide shallow lunation, limited by two very short teeth; subapical margins finely denticulate; striate-punctate, striae punctures small and close, intervals minutely and varying punctate, the 2nd, 4th and 6th rather strongly costiform; underside with fine shallow punctures.

Dimensions: 11 x 4 mm.

Habitat: Victoria, Walsh Creek.

A single example (♀) in the Melbourne Museum, labelled as above, is a very distinct member of the *bifasciata* Hope group, with raised intervals like those of *coeruleipes* Saund., but even more so. Compared with *coeruleipes* var. *montana* Cart., besides colour differences, the form is narrower, the apices without the strong external tooth, and deep lunation of that species and the preapical yellow fascia extending along sides are all distinctive. Holotype in the National Museum.

STIGMODERA (CASTIARINA) RUBELLA n. sp.

(Plate xxx., fig. 6.)

Oval; head, pronotum, underside and appendages golden green, elytra red, with a straight preapical fascia, extending to sides, and an oval apical mark narrowly connected along suture with fascia blue black; beneath with fine, close pubescence.

Head with shallow excavation, unusually produced in front, clypeus widened and notched in middle; strongly, not closely, punctate.

Prothorax widest at base, moderately convex, apex nearly straight, base strongly bisinuate, without evident excisions, sides arcuately narrowed from base to apex, all angles acute and produced; disc evenly and finely punctate, a medial sulcus subcontinuous throughout, terminated behind by a deep fovea.

Scutellum cordate, concave and punctate.

Elytra moderately enlarged at shoulders, lightly constricted behind, apices with a rather wide semicircular lunation, limited by a strong external tooth, margins entire; striate-punctate, striae punctures generally hidden, intervals mostly flat, convex at apex, and rather strongly punctate and transversely wrinkled; prosternum finely and sparsely, its flanks more coarsely, rest of underside minutely punctate.

Dimensions: 10 x 4 mm.

Habitat: Australia.

A single (♂) example in the Melbourne Museum is distinct in its (*andersoni* C. & G.) group, by the combination of metallic green pronotum and underside, red elytra with the form and pattern of *distincta* Saund. and the apical structure of *kershawi* Cart. Holotype in National Museum.

STIGMODERA (CASTIARINA) RUBICUNDA n. sp.

(Plate xxix., fig. 3.)

Widely oblong ovate. Head, pronotum, scutellum, underside and legs a rich blue, antennae and tarsi green, elytra orange—red towards margins—with the following markings blue or blue-black; suture and basal margins blue; wide postbasal fascia, narrowly connected around scutellum with basal margin, not extending to sides, its lateral border obliquely extending to humeral callus; an irregular postmedial fascia, lozenge shaped at suture, widened at and extending to sides, and a trapezoidal apical mark widely connected with fascia at suture, narrowly covering apex and thence narrowly extending along subapical margins, blue black.

Head excavate, channelled, strongly punctate.

Prothorax widest behind middle, apex lightly, base rather strongly bisinuate, without excisions, but subangulate at their usual region; sides strongly bulging at posterior third, thence obliquely converging to apex and more lightly to base, all angles—especially anterior—acute; disc with three basal foveae, the middle one connected with smooth medial line, the lateral largely occupying depressed area near hind angles; the apical declivity steep; the apical and lateral depression causing a subgibbous aspect to discal area; disc irregularly punctate, the punctures sparse near middle, coarse and subrugose at sides, closer and smaller in intermediate region.

Scutellum subcordate, concave, laevigate.

Elytra slightly widened at shoulders and postmedially, little compressed; apices bidentate with rather wide lunation, a short sutural and larger exterior tooth; subapical margins denticulate; striate-punctate; striae punctures large, intervals mostly flattish, strongly punctate and slightly transversely rugulose.

Prosternum rather coarsely and sparsely, rest of underside more closely and finely punctate, with sparse fine pubescence.

Dimensions: 17 x 7.5 mm.

Habitat: N.W. Australia, Upper Herbert River. (In Coll. of F. E. Wilson).

A single example (♀) of this fine species is nearest *cruenta* C. & G. in its pattern, but is larger, especially wider than it; the pronotum and underside of a beautiful blue. The pronotal structure is near that of *S. pallas* Blkb. from which (as also from *cruenta*) it is clearly separated by the markedly bispinose apices. Holotype in Coll. F. E. Wilson.

STIGMODERA (CASTIARINA) AURANTIACA n. sp.

(Plate xxx., fig. 5.)

Oval; head, pronotum, scutellum, underside and appendages metallic green, glabrous; elytra uniformly orange colour.

Head channelled, with shallow excavation, densely, finely, punctate.

Prothorax widest at base, moderately convex, apex nearly straight, base rather strongly bisinuate, with minute excisions; sides lightly arcuately converging to apex, all angles acute; disc densely punctate, a fine medial sulcus, intermittent and lightly impressed, terminated behind by small fovea.

Elytra enlarged at shoulders, lightly compressed behind them, apices

finely excised and sharply bispinose; striate-punctate, the striae punctures relatively large and close; intervals in general flat, except near apex, minutely and sparsely punctate and transversely wrinkled. Underside densely and unusually strongly punctate throughout.

Dimensions: 8.9 x 3.35 mm.

Habitat: N.W. Victoria; L. Hattah. (J. E. Dixon).

Another of Mr. Dixon's discoveries, of which six examples are before me, 3 of each sex. It can only be confused with *tincticauda* Cart., *immaculata* Cart. and *dispar* Blackb. The first is separated by its raised attenuate intervals and tinted apical area; the second by its sexual coloration and flat, subconic prothorax; the third by its widely ("fortiter") rounded prothorax and testaceous elytra. I have one example, and have seen others of this Queensland species in the National Museum. Holotype ♂ and allotype ♀ in Coll. Carter.

STIGMODERA (CASTIARINA) OBLITA n. sp.

Oblong oval, subdepressed, head and pronotum bright bronze, sometimes greenish at sides, underside green or greenish bronze, antennae and legs blue, elytra yellow with greenish black markings as follows: a post-basal diamond-shaped mark on suture, narrowly connected with base, and in general also narrowly connected with a sinuate vitta covering shoulder and humeral callus, then turning almost at right angles to lateral margin; a straight, rather wide preapical fascia, enlarged at suture, and narrowly connected at suture with an equally wide apical patch.

Head excavate, channelled and closely punctate.

Prothorax convex, widest at middle, apex nearly straight, base bisinuate, without excisions, sides moderately rounded, all angles subacute; disc closely and very finely punctate, a medial line intermittently showing, terminated by a small fovea.

Scutellum subcordate, concave, punctate.

Elytra lightly enlarged at shoulders and compressed behind them, apices bispinose, with rather large lunation, exterior tooth the more prominent, subapical margins minutely, scarcely visibly, denticulate; striate-punctate, striae punctures large and close, intervals flat, except at apex, and impunctate.

Prosternum finely and closely (more strongly on flanks) punctate, rest of underside minutely so, without evident pubescence.

Dimensions: 7.95 x 2.5-3.5 mm.

Habitat: New South Wales, Gordon, Wahroonga, Gosford (the author); Dorriggo (W. Heron), Narrabeen. Queensland: Stanthorpe (Dr. K. Spence Coll.).

Of 10 examples before me, 6 have the postbasal spot connected with the humero-lateral vitta; in 4 this spot is isolated. The species has long been unnamed in my cabinet, though not uncommon in the North Sydney district, as I hesitated to describe what might prove to be a varietal form of one of the *assimilis* Hope group, but the constancy of pattern and colour, flattish form, rather strongly bidentate apices (much as in *kershawi* Cart.) show distinction. It is nearest, in pattern, *minuta* Blkb., in which, however, the suture is dark throughout, the pronotum (and often underside) brilliant coppery and the apices very finely bispinose. Holotype and allotype in Coll. Carter.

STIGMODERA (CASTIARINA) VULGARIS n. sp.

Shortly ovate; head, pronotum, underside and appendages blue, elytra red with the following markings blue: a subcircular spot on suture behind

scutellum, an oblique spot on each side of this behind humeral callus, slightly in advance of the first, a straight postmedial fascia extending to sides, narrowly connected along suture with an oval apical patch.

Head normally excavate, closely, finely punctate.

Prothorax widest behind middle, lightly convex, apex subtruncate, base rather strongly bisinuate, without excisions; sides lightly rounded, sub-sinuate behind; all angles subacute; disc finely, uniformly punctate, a medial sulcus indicated near base and apex, terminated behind in a strong fovea.

Scutellum semicircular, concave.

Elytra strongly widened at shoulders, sinuately narrowed and constricted behind, widest at fascia, extreme apices finely bispinose, with a small lunation, sole apical margins minutely denticulate; striate-punctate, striae punctures rather large and regular, intervals convex throughout, strongly so behind, also the scutellary 1st, 3rd and 5th at base; intervals clearly punctate and slightly transversely wrinkled. Underside finely punctate, most clearly so on prosternum and very sparsely pubescent.

Dimensions: 9-10 x 3.5 mm.

Habitat: Western Australia, Shark Bay and Kalgoorlie.

Four examples before me are apparently undescribed, though belonging to the common *sexplagiata* C. & G. group. The combination of red elytra, blue pronotum and underside and apical mark completely covering apices separates it from *piliventris* Saund. which seems to be its nearest ally.

The pronotum is also much less strongly punctate, its sides widely rounded, and the underside much less pilose.

Holotype in Coll. Cart.

STIGMODERA (CASTIARINA) GARRAWILLAE n. sp.

(Plate xxx., fig. 7.)

Ovate; head, disc of pronotum, elytral markings, underside and legs bright green in ♂ [in the ♀ example the disc of pronotum is blue, its sides also, the ground colour of elytra are orange, and the elytral markings blue-green]; antennae golden, sides of prothorax widely yellow; elytra yellow with the following markings green; base, suture (triangularly widened at base), posthumeral spot, irregular postmedial fascia—not reaching sides—and an oval (subtriangular) preapical mark.

Head excavate and channelled, closely—not densely—punctate.

Prothorax apex arcuate emarginate, anterior angles, from above, acute; base lightly bisinuate, without excisions; posterior angles subrectangular; sides moderately rounded, scarcely sinuate, medial channel indicated near base and apex, punctures subuniform, slightly larger at base and sides.

Elytra lightly obovate, very slightly enlarged at shoulders, moderately compressed behind, apices rounded, margins finely denticulate; striate-punctate, seriate punctures small and indistinct; intervals flat save at apex and the 3rd and 5th at base; clearly punctate on basal third; elsewhere transversely wrinkled. Underside densely and finely punctate and very sparsely pubescent.

Dimensions: 12 x 4.2 mm.

Habitat: New South Wales, Mullaley (the author).

I took two examples (sexes) of this on leptospermum flowers in November of this year (1930), which I name after the beautiful homestead of my host, Mr. C. A. Anderson. In pattern it is almost a replica of *C. scalaris* Boisd. from which it is distinguished by the yellow margins, more widely

rounded sides, and the stronger and less dense punctures, of the prothorax; the unarmed apices and denticulate margins of elytra. (Entire in *scalaris*). Holotype in Coll. Cart.

[N.B.: It is a coincidence that my own home at Wahroonga also bears the name *garrawilla*.]

STIGMODERA (CASTIARINA) FLAVOSIGNATA Macl.

var. RUFOSIGNATA new var.

A single example was taken by me at Mullaley, N.S.W., that is strikingly different in colour from the typical Queensland forms. The yellow ground colour and underside is here replaced by blood red, while the dark pattern of the elytra is golden or brassy green.

[N.B.: This species, so far only recorded from Queensland, is very variable; there is sometimes a yellow basal mark to the elytra, connected at sides with the medial yellow band. The legs and abdominal spots in all examples I have seen are blue; not black as in Macleay's description.]

RETABULATION OF THE SUBGENUS CASTIARINA.

Section A.: Elytra carinate-costate. (*Erythroptera* Boisd. Group).

1. Elytra wholly, or chiefly yellow. 2.
- Elytra wholly, or chiefly red. 4.
- Elytra dark purple, each with 4 discal and a humeral mark yellow, underside and pronotal margins also yellow. *costipennis* Saund.
2. Elytra wholly yellow, pronotum purple. *attenuata* Cart.
- Elytral apices, or subapical mark dark. 3.
3. Pronotum testaceous, elytral apex brown. *testacea* Saund.
- Pronotum black, elytral apex black. *nanula* Kerr.
4. Pronotum dark. 5.
- Pronotum red with black vittae. *decipiens* Westw.
- *capucina* Thoms.
- *tricarinata* Macl.
- var. (elytra black) *octocostata* Cart.
5. Pronotal surface normally even. 6.
- Pronotal surface notably uneven. 9.
6. Elytra with subapical mark only dark. *balteata* Saund.
- Elytra with suture and apex, or subapical mark dark. 7.
7. Apex black. *acuticollis* Cart.
- Subapical mark black. 8.
8. 11 mm. long, dark suture not continuous to base. *erythroptera* Boisd.
- 6 mm. long, dark suture throughout. *canaliculata* Blkb.
9. Elytral apices divergent and tridentate. *nasuta* Saund.
- Elytral apices not divergent, bidentate (except var. *trispiculis* infra). 10.
10. Tibiae widened. *latipes* Cart.
- Tibiae normal. 11.
11. Narrowly elongate, suture only dark. *impressicollis* Macl.
- *costalis* Saund.
- var. apices tridentate *trispiculis* Cart.
- Wider, elytral intervals in general black. 12.
12. Sides of prothorax irregular, elytra produced at suture.
- *spinolae* C. & G.
- var. sutural intervals only black. *fossithorax* Obenb.
- Sides of prothorax evenly arcuate, elytral apices lightly notched.
- *praetermissa* Cart.

Section B.: Elytra without prominent costae.

- (I) Elytra yellow or red, in general without dark markings, except a narrow basal border (1). (*flava* Saund. group).
13. Abdomen yellow. 14.
 Abdomen metallic green or coppery. 15.
14. Head and prothorax chiefly yellow. *flava* Saund.
 *flava* Thoms.
 *flavescens* Mast.
 *flavidula* Kerr.
 var. *notulata* Obenb.
 Head and prothorax metallic green or bronze. *pallidipennis* Blkb.
15. Elytra unicolorous, intervals subuniform. 16.
 Apical third suffused with red, alternate intervals raised.
 *tincticauda* Cart.
16. Sides of prothorax more or less roundly widened. 17.
 Sides of prothorax narrowed from base. 18.
17. 19 mm. long apices strongly bispinose *intacta* Cart.
 13 mm. long apices finely bispinose, pronotum and underside of ♂
 golden green, of ♀ coppery. *auricollis* Thoms.
 *planata* Cart.
 7-8 mm. long, without sexual coloration. *dispar* Blkb.
 *semenovi* Obenb.
18. Elytra testaceous, pronotum and underside as in *auricollis*.
 *immaculata* Cart.
 Elytra orange, pronotum and underside without sexual coloration.
 *aurantiaca* Cart.
- (II) Elytra yellow or red, with suture, apex (or preapical mark) or both dark; rarely also with small discal spot. (*rufipennis* Kirby Group).
19. Pronotum black. 20.
 Pronotum metallic. 23.
 Pronotum bicolorous. 35.
20. Pronotal sides widely rounded, with large laterobasal fovea.
 *rufipennis* Kirby.
 Pronotal sides less widened, without such fovea. 21.
21. Apical third of elytra dark. *nigriventris* MacL.
 Suture and extreme apex only dark. 22.
22. Elongate and parallel. *crocipennis* C. & G.
 *parallela* Saund.
 *nigricollis* Waterh.
 Widely ovate. *amplipennis* Saund.
23. Apex of elytra only dark. 24.
 Suture and apex dark. 31.
24. Abdomen metallic. 25.
 Abdomen yellow or red. 29.
25. Apices narrowly dark. 26.
 Apical third dark (less than 10 mm. long). *phaeorrhea* Kirby.
26. 20 mm. long. *rollei* Kerr.
 *hackeri* Cart.
 *caudata* Cart.
 14 mm. long or less. 27.

(1). The basal border is almost universally, narrowly dark. Unless specially noted this may be assumed throughout the table.

27. Pronotum and underside metallic green. *viridiventris* MacL.
 Pronotum and underside bronze. 28.
28. Pronotum with laterobasal fovea, apices rounded, margins entire. . .
 *luteipennis* C. & G.
 Pronotum without laterobasal fovea, apices strongly bispinose,
 margins finely serrulate. *punctiventris* Saund.
29. Apices with long external spine. *hirundicauda* Cart.
 Apices otherwise. 30.
30. Head and pronotum golden green. *cinnamomea* MacL.
 Head and pronotum purple bronze, elytra with or without discal
 spot. *straminea* MacL.
 *addenda* Kerr.
 *johannae* Théry.
 With 2 fascia and apex dark, vide No. 206. var. 1. *cara* MacL.
 var. 2. *placens* Kerr.
31. Abdomen metallic. 32.
 Abdomen yellow or red. 35.
32. 18 mm. long, suture widely dark. *elongata* Saund.
 Less than 18 mm. long, suture narrowly dark. 33.
33. Sutural mark continuous to apex, pronotum and underside golden
 green. *jucunda* Saund.
 *observans* Kerr.
 Sutural mark terminated by preapical transverse mark. 34.
34. Pronotum bronze, underside blue. *sub-pura* Blkb.
 Pronotum and underside blue. *fossoria* Cart.
35. Elytra testaceous, with or without dark discal spot. *guttata* Blkb.
 Apical area of elytra red. vide 203 (1). ♂ *maculiventris* MacL.
 *rubricauda* Saund.
 *strandi* Obenb.
36. Pronotum red, medial area black. *maculicollis* Cart.
 Pronotum black with wide red margins. 37.
37. Abdomen black. *marginicervex* Thoms.
 Abdomen wholly or partly red. 38.
38. Elytral apices rounded. *analis* Saund.
 Elytral apices strongly spinose. *armata* Thoms.
 *theryi* Cart.
- (III) Elytra yellow or red, with dark spots (*spilota* C. & G. group).
39. Pronotum concolorous. 40.
 Pronotum bicolorous. 49.
40. Elytra with 8 free (2) spots. *octomaculata* Saund.
 Elytra with 7 spots. 41.
 Elytra with 6 spots or less. 44.
41. Elytral spots free. *spilota* C. & G.
 *septemmaculata* Mannerh.
 Elytra with 6 spots and apical or subapical mark dark. 42.
42. Elytra with 6 spots and apex dark. *septemguttata* Waterh.
 var. spots variously coalescing to form fasciae. *tyrrhena* Blkb.
 Elytra with 6 spots and preapical mark dark. 43.
43. 9½ mm. long, pronotum and underside dark bronze, elytral intervals
 flat. *septemnotata* Cart.
 *septemmaculata* Blkb.

(1). This synonymy is suggested as extremely probable.

(2). Not marginal, or apical.

- 6-7 mm. long, pronotum and underside bright green, some intervals subcostata. *serguttata* Macl.
 var. elytra without markings. *puella* Saund.
 ? *humerguttata* Obenb.
 *carteri* Obenb.
44. Elytra with 6 free spots. *punctatostriata* Saund.
 Elytra with 5 free spots (all post-medial). . . *quinquepunctata* Waterh.
 Elytra otherwise. 45.
45. Elytra with 4 spots, also apex and sutural mark dark.
 * *scutellaris* Kerr.
 Elytra with 4 spots and apex dark. *quadriguttata* Macl.
 Elytra otherwise. 46.
46. Elytra with 3 postmedial spots and apex dark. *triguttata* Macl.
 *subcostata* Kerr.
 Elytra otherwise. 47.
47. Elytra with 2 spots and apex dark. 48.
 Elytra with 2 free preapical spots. * *diana* Obenb.
 Elytra with large discal spot and apex dark. . . *maculipennis* Saund.
48. Pronotum rugose with strong medial sulcus, elytra testaceous. . . .
 *bimaculata* Saund.
 Pronotum otherwise, elytra red. *binotata* Saund.
49. Pronotum yellow or red, with discal markings dark. 50.
 Pronotum dark, with wide yellow margins, abdomen sexually coloured. *septemspilota* Cart.
 Pronotum golden green, with a lateral yellow mark, elytra with 4 spots and apex dark. *eburnea* Cart.
50. Abdomen dark. 51.
 Abdomen red. 53.
51. Pronotum yellow with black basal spot, elytra with 2 spots and apex black. *trimaculata* Saund.
 Pronotum red with dark discal markings, elytra otherwise. 52.
52. Pronotum with triangular discal mark, elytra with 5 spots and apex green. *guttaticollis* Blkb.
 *consularis* Kerr.
 Pronotum with spade-shaped discal mark, elytra with 6 free spots blue. *seznottata* Cart.
53. Elytra with base, 7 spots and apex dark. . . . *mustelamajor* Thoms.
 *gibbosa* Macl.
 Elytra with base, 6 spots and apex dark. *coccinata* Hope.
 (spots form two fasciae in *elegantula*). . . . *elegantula* White.
 *atronotata* Waterh.
 Elytra with base, 3 spots and apex dark. . . . *quadriplagiata* Cart.
- (IV) Elytra dark with yellow or red spots (*producta* Saund. group).
54. Elytral spots and preapical fascia pale, the latter red at margins (except *pulchella* Cart). 55.
 Elytra with spots only pale, without red markings. 67.
55. Pronotum medially sulcate. 56.
 Pronotum not sulcate. 57.
56. Pronotum and underside brassy green. *producta* Saund
 *acutipennis* Thoms.
 ? *sulcicollis* Kerr.
 Pronotum and underside black. *venusta* Cart.
 *suavis* Cart.
 *modesta* Obenb.

57. Elytra green. *virginea* Erichs.
Elytra blue or blue black. 58.
58. Elytral markings transverse (subfasciate) 17 mm. long.
Elytral markings otherwise 12 mm. long or less. *harrisoni* Cart. 59.
59. Elytra with 2 lateral, besides discal spot, and fascia. 60.
Elytra without lateral spots. 63.
60. 12 mm. long, pronotum and underside brassy green. 61.
8 mm. long, pronotum black or blue. 62.
61. Pronotum with large laterobasal fovea, elytral apices finely
bispinose. *delta* Thoms.
Pronotum without such fovea, elytral apices strongly spinose. *deceptor* Kerr.
Pronotum without such fovea, elytral apices strongly spinose. *spectabilis* Kerr.
62. Pronotum black, elytra with red markings. *gentilis* Kerr.
Pronotum blue, elytra without red. *pulchella* Cart.
63. Apices widely excised, bispinose. 64.
Apices closely unispinose. 65.
(excision very oblique and narrow, sutural spine obsolete).
64. Exterior spine long, pronotum with postero-lateral fovea.
var. with yellow basal mark. *insignis* Blkb.
Apical spines subequal. *caudata* Kerr.
Apical spines subequal. *delicatula* Kerr.
65. Basal yellow marks elongate, preapical transverse. *acuminata* Kerr.
Basal yellow marks transverse, preapical linear and oblique.
oblique Kerr.
66. Elytra with 8 pale spots. 67.
Elytra with 6 pale spots. 68.
67. Pronotum bicolorous, disc coppery, sides green, 17 mm. long.
Pronotum concolorous greenish black, 10 mm. long. ** jakobsoni* Obenb.
Pronotum concolorous greenish black, 10 mm. long. *confinis* Kerr.
68. 7 mm. long, elytra black, all spots near base. *lilliputana* Thoms.
(*neocuris*) *mastersi* MacI.
var. with an extra spot near apex. *ocularis* Kerr.
10.5 mm. long, elytra not black, one pair of spots near
apex. 69.
69. Elytra coppery, basal mark L-shaped, medial subfasciate.
Elytra blue, spots more or less round. *confusa* Waterh.
Elytra blue, spots more or less round. *guttifera* Obenb.
- (V) Elytra chiefly dark or metallic. (except *variopicta* Thoms.)
(*semicincta* C. & G. group).
70. Abdomen dark. 71.
Abdomen at least in part yellow or red. 79.
71. 18 mm. long or more. 72.
12 mm. long or less. 76.
72. Elytra without defined fascia. 73.
Elytra with defined fascia. 74.
73. Elytra black with yellow margins. *semicincta* C. & G.
Elytra yellow, in general suture, large basal, preapical and other
markings dark. *variopicta* Thoms.
Very variable, the dark markings tending to obsolescence; included
here as clearly closely allied to, but distinct from
semicincta C. & G.
74. Pronotum dark or metallic. 75.

- Pronotum red, elytra with humeral spot and medial fascia pale. * *chobauti* Théry.
75. Elytra with a single yellow, medial fascia. *magnifica* Blkb.
Elytra with longitudinal vitta and narrow preapical fascia yellow. *jubata* Blkb.
. *tasmani* Obenb.
76. Elytra green, with lateral and preapical marks red. 77.
Elytra blue-black, with wide medial fascia yellow. *obsepta* Kerr.
77. Preapical mark narrowly fasciate, apex widely dark green.
. *dulcis* Blkb.
Probably a Tasmanian subspecies of *thomsoni* Saund. *colorata* Kerr.
Preapical mark widely red, apex narrowly light green. 78.
78. Preapical red mark with 2 green spots. *ocelligera* C. & G.
Preapical red mark without spots. *kerremansi* Blkb.
. *apicalis* Kerr.
79. Pronotum yellow with dark markings. *pertyi* C. & G.
. var. *mima* Saund.
Pronotum dark with yellow margins. 80.
80. Elytra green, with basal, lateral and preapical area red.
. *luteocincta* Saund.
Elytra black, with basal third (except shoulders) yellow.
. *seminigra* Cart.
- (VI) Elytra dark, with pairs of yellow or red marks, sometimes forming interrupted fasciae. (*decemmaculata* Kirby group).
81. Prothorax concolorous. 82.
Prothorax bicolorous. 92.
82. Abdomen dark. 83.
Abdomen more or less yellow. (3) *pictipennis* Saund.
. var. *laetabilis* Kerr.
83. Elytral margins yellow, or with yellow markings. 84.
Elytral margins without yellow markings. * *opactipennis* Obenb.
84. Elytral margins yellow throughout. 85.
Elytral margins with 2 or more yellow markings. 86.
85. Pronotum purple, elytra with 4 pairs of discal spots.
. *xanthospilosa* Hope.
. *splendida* Gehln.
Pronotum brassy green, elytra with 3 pairs of discal spots.
. *crocicolor* C. & G.
. *consanguinea* Saund.
86. Elytra with 4 pairs of discal and 2 lateral pale marks. 87.
Elytra with 3 pairs of discal and 2 lateral pale marks. 88.
87. Pale marks yellow, discal marks oval, non-fasciate. *parallela* White.
. *elongatula* MacI.
Pale marks red, 2 posterior pairs of marks fasciate. *lepida* Cart.
(The lateral marks sometimes coalesce, and continuous throughout.)
88. All discal markings more or less round (non-fasciate). 89.
Some discal markings fasciate. 90.
89. Pronotum blue-black, each elytron with one lateral spot yellow.
. *octosignata* Cart.

(3). *pictipennis* Saund. in general with 8 discal and a lateral spot yellow, but the 4 basal spots sometimes coalesce as in Saunders' figure. The 2 small spots near apex are sometimes absent, giving rise to the var. *laetabilis* Kerr.

- Pronotum bronze, each elytron with 2 elongate lateral marks. * *balthasari* Obenb.
 (? colour var. of *parva* Saund.)
- Pronotum bright green, each elytron with 3 lateral marks yellow. *parva* Saund.
90. Elytra with posterior pair of yellow markings fasciate. 91.
 Elytra with 2 posterior pairs fasciate. *laena* Thoms.
 var. *electa* Kerr.
 (In *laena*, the basal spot connected with humero-lateral, in *electa* these spots separate).
91. Underside pilose, apices separately rounded. *mansueta* Kerr.
 Underside glabrous, apices widely bidentate. *tropica* Cart.
92. Head without yellow spot, underside dark. 93.
 Head with yellow spot, underside (at least abdomen) yellow. 95.
93. Pronotum with green or coppery margins. 94.
 Pronotum with yellow or red margins. 95.
94. Pronotum purplish, margins green, post fascia produced round apical spot. *versicolor* C. & G.
 var. postfascia not extending along sides. *decemguttata* Gory.
 (archaeozodes) *strandii* Obenb.
 Pronotum with margins coppery ♂, concolorous blue with disc ♀. *subversicolor* Cart.
95. Elytral apices bidentate, subapical margins serrulate. *serratipennis* Cart.
 Elytral apices *tridentate* (except in *cincta* Blkb. Vide infra), margins entire. 96.
96. Form more or less ovate and obese. 97.
 Form oblong (subparallel). 98.
97. Elytral markings red, intervals strongly punctate. *argillacea* Cart.
 Elytral markings yellow, intervals moderately punctate. *octospilota* C. & G.
 *femorata* C. & G.
 *adelaidae* Hope.
 var. *rufipes* MacL.
 *stigmaticollis* Obenb.
98. Elytral apices pale, margins almost wholly red. 99.
 Elytral apices dark, margins largely dark. 100.
99. 13 x 5 mm., elytral intervals, at least on lateral half, convex. *cincta* Blkb.
 *rubrocincta* Kerr.
 var. 1 *flaviceps* Cart.
 var. 2 *cupriceps* Cart.
 var. 3 *tridens* Cart.
 10 x 3 mm. (or less), intervals almost wholly flat, *pallidiventris* C. & G.
 var. *yilgarni* Obenb.

(There are endless variations of pattern in these two common species, from examples in which the metallic area forms 3 fasciae, with sutural and humeral vitta, the latter more or less extending to base to those in which merely the suture and a few vague lines or spots are metallic. Moreover in the larger species (*cincta*), that, in a long series, I can only separate from *pallidiventris* by size and more convex intervals, the apical structure, in general (as Kerremans states) sinuate, is sometimes clearly bidentate and sometimes as clearly tridentate (vide supra).

100. Discal pale marks in general isolated (not reaching margin nor suture), apical pair non-fasciate. 101.
 Apical 4 pale marks, at least, fasciate. 102.
101. Basal pale marks more or less round. *decemmaculata* Kirby.
 *inaequalis* Kerr.
 Basal pale marks elongate, disc of pronotum bronze. . . *picta* C. & G.
 subspecies, disc of pronotum blue. *malleeana* Cart.
- (In the subspecies the basal pair enlarged and often narrowly connected with lateral yellow.)
102. Basal pale marks round. *elderi* Blkb.
 *rustica* Kerr.
 All pale marks more or less fasciate. *diversa* Kerr.
 (The last 3 names probably stand for variations of the same species.)
- (VII) Elytra yellow or red, with sutural and lateral vittae dark.
 *vittata* Saund. group.
103. Pronotum concolorous, vittae continuous to apex. . . . *vittata* Saund.
 Pronotum with red margins, lateral vitta not continuous to apex. . .
 *amabilis* C. & G.
- (VIII) Elytra yellow or red, with postmedial fascia, apex or preapical mark dark; or suture also, and sometimes a humeral spot dark.
 (*andersoni* C. & G. group).
104. Elytral suture not dark. 105.
 Elytral suture in part or whole, dark. 124.
105. Apices wholly dark. 116.
 Elytra with preapical mark dark. *mastersi* Macl.
 *hoblerae* Cart.
106. Prothorax concolorous, basal dark zone of elytra not extending to shoulders. 107.
 Prothorax with yellow margins, basal dark zone extending to shoulders, 9 mm. long. *titania* Cart.
107. 17-21 mm. long. 108.
 15 mm. long or less. 110.
108. Pronotum golden bronze, elytra without red, fascia short.
 *aurifera* Cart.
 Pronotum green or blue, elytra with red markings. 109.
109. Space between fascia and apical mark red. *alternata* Lumh.
 Post margins red, fascia and apical mark connected laterally by dark band. *erubescens* Blkb.
 var. without postmedial fascia. *horni* Kerr.
 *unimaculata* Cart.
110. Hind margins of elytra serrulate. *longicollis* Saund.
 Hind margins of elytra entire. 111.
111. Elytra without red markings. 112.
 Elytra with red markings. 118.
112. Apices strongly bispinose. 113.
 Apices not strongly bispinose. 114.
113. Dark markings of elytra, a narrow fascia and squarish apical mark. . .
 *andersoni* C. & G.
 var. *dicax* Obenb.
 Dark markings of elytra, a scutellary patch, wider fascia, and transverse apical mark. *verax* Kerr.
114. 15 mm. long or more, pronotum green or blue. 115.
 13 mm. long or less, pronotum black, or bronze black. 116.

115. Pronotum and underside olive green. *domina* Cart.
 Pronotum and underside blue. * *bicolorella* Obenb.
116. Basal dark markings not extending to shoulder. 117.
 Basal dark markings extending to shoulder. * *baliola* Kerr.
117. Basal half of elytra yellow, fascia wide. *nova* Kerr.
 (pars) *inermis* Kerr.
 Basal two-thirds of elytra yellow, fascia narrow. *distincta* Saund.
 *sternalis* Blkb.
 *deliciosa* Kerr.
 (pars) *inermis* Kerr.
- [N.B.: Of examples labelled "*inermis* Kerr. type" in the British Museum,
 one = *nova* Kerr. a second example = *distincta* Saund.]
118. Elytra red. 119.
 Space between fascia and apical mark, red. 120.
119. Form ovate, pronotum golden green, elytra without posthumeral
 spot. *rubella* Cart.
 Form elongate, pronotum blue, elytra with small posthumeral
 spot. *gracilior* Cart.
 *gracilis* Cart.
120. Elytra without posthumeral spot, 13-14 mm. long. 122.
 Elytra with large posthumeral spot, 10 mm. long. *festiva* Cart.
121. Apices strongly bispinose, underside blue-black. *brutella* Thoms.
 *terminalis* Kerr.
 Apices finely bispinose, underside coppery green. *graphisura* Thoms.
 *uniformis* Kerr.
122. Elytral apex dark. 123.
 Elytra red with preapical mark only. 132.
123. Abdomen dark, margins entire. 124.
 Abdomen yellow, subapical margins serrulate. 131.
124. Apices of elytra trispinose. *pulchripes* Blkb.
 Apices of elytra bispinose. 125.
 Apices of elytra unispinose or simply lunate (without
 distinct tooth). 129.
125. Elytra yellow. 126.
 Elytra red. 128.
126. Pronotum bronze, sutural mark only extending from
 base to fascia. 127.
 Pronotum black, sutural mark extending from base to
 apex. *campestris* Blkb.
 *deleta* Kerr.
 ? *saundersiana* Obenb.
127. Elytral markings blue, fascia reaching margins. *skusei* Blkb.
 Elytral markings blue-black, fascia not reaching margins.
 * *laudabilis* Kerr.
- [Hitherto treated as synonyms, but the distinctions suggest separation
skusei sometimes with small shoulder spot.]
128. 20 mm. long, apices of elytra widely dark. *sancta* Cart.
 10 mm. long, dark subapical mark narrowly produced to apex.
 *aeneicornis* Saund.
129. 13 mm. long, pronotum and underside dark blue. *perlonga* Cart.
 7-9 mm. long, pronotum and underside otherwise. 130.
130. Pronotum globose, dark basal markings not produced to shoulders. . .
 *flindersi* Cart.
 Pronotum subcylindric, dark basal markings produced to shoulders. . .
 *aurolimbata* Cart.

131. Elytra with shoulder spot and markings blue, suture dark only near base. *fulviventris* MacL.
 ? *ochreiventris* Saund.
 *guttigera* Blkb.
 Elytra without shoulder spot, markings green, suture dark throughout. *strigata* MacL.
132. Pronotum and underside golden bronze, fascia and suture abbreviated. *aureola* Cart.
 Pronotum and underside bright green, fascia only represented by elongate marks. *sanguinolenta* C. & G.
 [The last somewhat anomalous, doubtfully included here.]
- (IX) Elytra yellow or red, with basal margin, humeral vitta, suture, post-medial fascia and apex, or preapical mark, dark.
 (*undulata* Don. group).
133. Humeral vitta, not extending backward to fascia. 134.
 Humeral vitta connected with fascia. 152.
134. Prothorax concolorous. 135.
 Prothorax with yellow or red margins. 150.
135. Abdomen dark. 136.
 Abdomen yellow or red. 146.
136. Elytra yellow. 137.
 Elytra red or with red markings. 145.
137. 16 mm. or more long. 138.
 12 mm., or less, long. 139.
138. Prothorax widest at middle, body and markings green, apices rounded. *undulata* Don.
 Prothorax widest at base, body and markings blue, apices bidentate. *neglecta* Cart.
139. Elytra with apex dark. 140.
 Elytra with preapical mark dark. 142.
140. Oblong, subcylindric, elytral markings peacock green or blue. 141.
 Subovate, elytral markings purple. *flavopurpurea* Cart.
141. More elongate and parallel. *wilsoni* Saund.
 var. *sigma* Kerr.
 *septentrionis* Obenb.
 (doubtfully distinct by sculpture). ? *montigena* Oke.
 Shorter, more sinuate elytra. *flavopicta* Boisd.
 *flavopicta* C. & G.
 *flavovaria* Saund.
 *bicolor* C. & G.
 *colorata* Hope.
 [Elytra largely green in Tasmanian subspecies.]
142. Some elytral intervals subcostate. *costata* Saund.
 Elytral intervals uniform (or not conspicuously raised). 143.
143. Humeral vitta connected with basal band. *anchoratis* C. & G.
 *agrestis* Kerr.
 *arborifera* Blkb.
 ? *tantilla* Obenb.
 [The last described with slight colour distinction, base of pronotum much narrower than elytra at shoulders.]
 Humeral vitta in general isolated. 144.
144. Humeral vitta elongate, pronotum and underside green.
 *iospilota* C. & G.

- Humeral vitta short, pronotum and underside bronze. . . * *crux* Saund.
 [Unique in Brit. Mus., undetermined in Australian collections and near
 some ex. of *jekelli* Saund.]
145. Elytra red, markings green, 12 mm. long or more. . . *indistincta* Saund.
 Apical regions red, markings blue (shoulder mark small), 8-10 mm.
 long. *disjecta* Kerr.
146. Elytra yellow. 147.
 Elytra red. 148.
147. Fascia and subapical mark wide, abdomen yellow in both sexes. . . .
 *abdominalis* Saund.
 ? *unica* Kerr.
 Fascia broken up into spots, subapical mark narrowly continued to
 apex, abdomen yellow in ♂, bronze in ♀. *ignea* Blkb.
148. Prothorax bronze, abdomen ♂ yellow, ♀ bronze. *jekelli* Saund.
 Prothorax golden green, abdomen yellow in both sexes. 149.
149. Pronotum finely punctate, elytral markings golden green, 14 mm.
 long. *ignota* Saund.
 var. without vitta or fascia. *semisuturalis* Saund.
 Pronotum coarsely punctate, elytral markings darker, 17 mm. long. . .
 *speciosa* Kerr.
150. Elytra yellow, 10-12 mm. long. 151.
 Elytra red, 14-15 mm. long. *cupida* Kerr.
 (spelt *cupida* on labels of types in Br. Mus.)
151. Preapical mark cordate or anchor shaped. *tricolor* Kirby.
 *curta* Saund.
 *opima* Kerr.
 Wide preapical mark surrounding 2 yellow spots (vide 260).
 *victoriensts* Blk. var. *humeralis* Kerr.
 vitta often reduced to a spot. *tillyardi* Cart.
152. Pronotum, underside and elytral markings blue. *desideria* Cart.
 [In form and colour near *longicollis* Saund.]
 Pronotum and underside otherwise. 153.
153. Prothorax golden bronze, underside and elytral markings golden
 green. *deuqueti* Cart.
 Prothorax and elytral markings blackish, underside bronze.
 * *clancula* Obenb.
- (X) Elytra yellow or red, with postscutellary patch, postmedial fascia and
 apex, or subapical mark, dark. (*bremei* Hope group).
154. Prothorax concolorous. 155.
 Prothorax with yellow or red margins. 162.
155. Postscutellary patch large. 156.
 Postscutellary patch small. 158.
156. Elytra with apex widely dark, pronotum and underside violet
 coppery. *ornata* Blkb.
 Elytra with preapical mark dark. 157.
157. Body and markings bronzy black. *bremei* Hope.
 Body and markings green in ♀ (markings subobsolete in ♂).
 *discoidea* Cart.
158. Elytra with apex dark, without humeral spot. 159.
 Elytra with preapical mark green, with humeral spot, 7-8 mm. long. . .
 *hilaris* Hope.
159. Prothorax blue-black, 13 mm. long. *cordifer* Kerr.
 Prothorax coppery green, 9 mm. long. *doddi* Cart.
160. Elytra with apex dark, apices bidentate. 161.

- Elytra with preapical mark (sometimes reaching apex)
 apices rounded. 162.
161. Postscutellary patch not extending to shoulders, elytral intervals closely punctate. *biguttata* Macb.
 *terraereginae* Blkb.
 *triangularis* Kerr.
 Postscutellary patch extending to shoulders, elytral intervals sublaevigate. *gibbicollis* Saund.
 var. *fascigera* Kerr.
162. Postscutellary patch not extending to shoulders, markings dark green or blue. *grata* Saund.
 Postscutellary patch extending to shoulders, markings bright green. *subgrata* Blkb.
 *campestris* Kerr.
- [The last possibly a subspecies of *grata*, found in Alpine N.S.W. and Victoria.]
 (XI) Elytra dark, in general with 2 yellow or red fasciae.
 [In *militaris* and *flavoviridis* with a longitudinal vitta also.]
 (*bifasciata* Hope group).
163. Elytra without subhumeral vitta. 164.
 Subhumeral vitta connected internally with medial fascia. 178.
164. 15-20 mm. or more long. 165.
 Less than 15 mm. long. 172.
165. Prothorax concolorous. 166.
 Prothorax with yellow or red margins. 170.
166. Elytral apices rounded. 167.
 Elytral apices bidentate. 169.
167. Dark zones of elytra wide, more or less regular. 168.
 Dark zones of elytra narrow and irregular. *pallas* Blkb.
168. Pronotum bronze, underside blue. *hoffmannseggii* Hope.
 Pronotum violet, underside green. *fairmatrei* Kerr.
169. Prothorax strongly widened. *commixta* Cart.
 Prothorax lightly widened. *klugi* C. & G.
170. Whole underside red, subapical margins serrulate. *marginicollis* Saund.
 ? * *bifasciatella* Obenb.
 Abdomen only partly red, subapical margins entire. 171.
171. Prothorax strongly widened, apices of elytra strongly bispinose. *erythromelas* Hope.
 *longula* Blkb.
 ? *cicerini* Obenb.
 Prothorax lightly widened, apices of elytra bidentate. *cyanipes* Saund.
172. Postmedial fascia yellow. 173.
 Postmedial fascia largely red. *bella* Saund.
 *cruentata* C. & G.
 var. with basal yellow band. *dixonii* Cart.
173. Elytra black, blue-black or violaceous. 174.
 Elytra green. *dimidiata* Cart.
 var. without medial fascia. *leai* Cart.
 *dorsalis* Obenb.
 var. with humeral yellow spot. *fasciosa* Obenb.
174. Apices trispinose. *bifasciata* Hope.
 *bicincta* Boisd.
 *bicingulata* C. & G.
 *dejeani* Gory.
 *trispinosa* Kerr.
 var. *bina* Obenb.

- Apices bispinose. 175.
175. Alternate elytral intervals subcostiform. 176.
Elytral intervals more or less uniform. *vicina* Saund.
176. Subapical margins entire. 177.
Subapical margins denticulate, subapical fascia continued laterally
towards apex. *interstitialis* Cart.
(extra basal yellow mark as in *montana* infra).
177. Elytra blue-black, apices strongly bispinose (13 x 5 mm.)
. *coeruleipes* Saund.
var. with extra basal yellow mark. *montana* Cart.
Elytra purple, apices finely bidentate (8-9 x 2.5 mm.)
. *subbifasciata* Saund.
178. Prothorax concolorous green, vitta straight, not extending to base. . .
. *flavo-viridis* Cart.
Prothorax blue with yellow margins, underside yellow, vitta obliquely
extending beyond basal margins. *militaris* Cart.
(XII) Elytra yellow or red, with basal margin, two fasciae and apex, or
preapical mark, dark. (*kirbyi* Guér. group).
179. Prothorax concolorous. 180.
Prothorax bicolorous. 217.
180. Apical mark covering apex. 181.
Preapical mark not, in general, extending to apex. 206.
[Sometimes modified by a sutural extension to apex.]
181. Abdomen metallic, or dark. 182.
Abdomen yellow or red (at least in one sex). 202.
182. 17-20 mm. long, form robust. 183.
15 mm. long, or less, form more slender. 186.
183. Elytra yellow, markings blue-black. 184.
Elytra red, or with red areas, markings peacock blue. 185.
184. Apices simple, margins entire. *cognata* Kerr.
Apices bidentate, hind margins serrulate, pronotum and underside
coppery green. *cupricollis* Saund.
var. pronotum and underside more obscure. *alternozona* Thoms.
. *julia* Thoms.
185. Elytra red, apices finely bidentate. *robusta* Saund.
Elytra orange, margins red, apices strongly bispinose. *rubicunda* Cart.
186. Elytra yellow. 187.
Elytra red, or with red margins. 193.
187. Form convex and parallel. 188.
Form depressed and sinuate. 189.
188. Pronotum blue, 15 mm. long. *kirbyi* Guér.
. var. *adonis* Obenb.
. var. *peregrina* Obenb.
Pronotum bronze green, 12 mm. long. *affabilis* Kerr.
. *simplex* Kerr.
189. Elytral intervals more or less uniform. 190.
Some intervals subcostate. 191.
190. Elongate, apices obliquely excised. *trifasciata* Saund.
More widely ovate, apices evenly bidentate. *colligens* Kerr.
191. Pronotum black, submetallic, alternate intervals of
elytra subcostate. 192.
Pronotum bronze, intervals 3 and 5 slightly raised. . . *imitator* Cart.
192. Yellow zones, especially basal, wide, markings blue-black.
. *rectifasciata* Saund.
Yellow zones very narrow, markings violaceous. *vigilans* Kerr.

193. 14-16 mm. long. 194.
 12 mm. long or less. 196.
194. Apices strongly bispinose, apical spine long. 195.
 Apices finely bispinose. *helmsi* Cart.
195. Elongate attenuate, postmedial fascia narrow. *pisciformis* Cart.
 Ovate, postmedial fascia wide. *thomsoni* Saund.
196. Narrowly oblong, elytral intervals uniform. 197.
 Wider and sinuate, elytra with sutural intervals sub-costate. 199.
197. Pronotum and underside peacock blue or green. 198.
 Pronotum and underside bronze. *recta* Saund.
198. Apices finely bispinose, 8-9 mm. long. *vegeta* Hope.
 *coeruleiventris* Saund.
 *haroldi* Saund.
 *viridiventris* Saund.
 *neologa* Thoms.
 var. premedial green band continuous to base. *cruentata* Kirby.
 Apices truncate, 6 mm. long. *coerulea* Kerr.
 *coelestis* Kerr.
 *stillata* Blkb.
199. Apices strongly spinose, pale zones red and wide. *kershawi* Cart.
 Apices subobsoletely dentate, pale zones red and narrow. 200.
200. Pronotum metallic black, elytral striae-obscure, 3rd interval strongly convex. *carinata* Macl.
 *opacula* Obenb.
 [Possibly a N. Queensland subspecies of the following.]
 Pronotum bronze green, elytral striae-distinct, 3rd interval lightly convex. *sexplagiata* C. & G.
 *plagiata* C. & G.
 *crenata* C. & G.
 *hopei* Boh.
 *similata* Boh.
 *krefti* Macl.
 *variata* Kerr.
 [With many variations, premedial fascia often broken up into spots.]
201. Elytra with red margins. 202.
 Elytra without red. 203.
202. Elytral margins entire, premedial fascia short and interrupted, abdomen in both sexes yellow (in part at least).
 ♀ *maculiventris* Macl.
 [for ♂ see 35] *nickerli* Obenb.
 Hind margins serrulate, premedial fascia continuous throughout, abdomen ♂ red, ♀ blue. *cruenta* C. & G.
203. Hind margins of elytra entire, apices truncate. 204.
 Hind margins of elytra serrulate, apices finely bidentate. 205.
204. Pronotum coppery, abdomen yellow, in both sexes, 15-20 mm. long.
 *secularis* Thoms.
 Pronotum bronze, abdomen ♂ yellow, ♀ metallic, 10-12 mm. long.
 *sexualis* Cart.
205. Prothorax "splendide cuprea," pale zones of elytra wide.
 *straminea* Macl. var. *cara* Blkb.
 Prothorax violet coppery. var. *placens* Kerr.
 [vide supra 30.]
 Prothorax metallic bronze, pale zones of elytra narrow. *maculifer* Kerr.

206. Elytra yellow. 207.
Elytra red, or with red areas. 210.
207. Apices simple (rounded). *punctatissima* Saund.
Apices more or less bispinose. 208.
208. Dark zones of elytra wide, subapical mark often extended to apex. . .
. *hopei* Saund.
Dark zones of elytra narrow, subapical mark lunate, not extended to
apex. 209.
209. Premedial fascia connected with short longitudinal humeral mark. . .
. * *ravilla* Obenb.
Premedial fascia only enlarged laterally. *crenata* Don.
. *placida* Thoms.
[*crenata* Don. has been difficult to determine. The type apparently
lost, but Kerreman's suggestion (Gen. Ins.) agrees with
Donovan's figure.]
210. Elytra red. 211.
Elytra with margins only red. 216.
211. Prothorax widest before middle. *dilatata* Cart.
Prothorax widest at or behind middle. 212.
212. Form oblong and convex. 213.
Form sinuate, wider and more depressed. 214.
213. Form robust, 13 x 5 mm. *sagittaria* C. & G.
. *gravis* Har.
. *obscuripennis* Saund.
. *tactia* Kerr.
. ? *gebhardti* Obenb.
Form slender, 9 x 3. *amphichroa* Boisd.
. *seespilota* C. & G.
. *sieboldi* C. & G.
var. pronotum and underside golden . . . (?) *protensa* Obenb.
214. Apices simple, pronotum and underside golden. *pulchra* Saund.
Apices finely bidentate. 215.
215. Pronotum blue-black, underside subglabrous. *felix* Kerr.
Pronotum bronzy, underside pubescent. *carminea* Saund.
216. Oblong and convex, prothorax brassy bronze, 15 x 5 mm.
. *aeraticollis* Cart.
Sinuate, more depressed, prothorax green bronze, 10 x 4 mm. . . .
. *punctatosulcata* Saund.
217. Margins of prothorax, also abdomen, yellow or red. 218.
Margins of prothorax, also abdomen, green. *cylindracea* Saund.
[Closely approaches *amphichroa* in form and pattern, but the con-
stant bicoloration of pronotum and obliquely excised apices
distinguish it.]
218. Margins of prothorax, also abdomen, yellow, disc coppery, fasciae
very narrow. *brevifasciata* n.n.
. *bifasciata* Saund.
Margins of prothorax, also elytra and underside, red. 219.
219. Prothorax green, apical mark covering apices, 15½ x 6 mm.
. *castelnaudi* Saund.
. *castelnaudi* Thoms.
. *thomsoniana* Mast.
. *laportei* Kerr.
Prothorax bronze, subapical mark produced to apex at suture, 12 x 5
mm. *distinguenda* Saund.

- Red areas replaced by yellow, preapical fascia often broken up into spots, $11 \times 3\frac{1}{2}$ mm. subspecies *differens* Cart.
 [Many examples taken by Mr. J. E. Dixon at Hattah dist. N.W. Vict.]
 (XIII) Elytra as in preceding, but premedial fascia broken up into 3 spots.
 (In *haswelli* Cart. both fasciae thus broken up). . . *scalaris* group.
220. Prothorax concolorous. 221.
 Prothorax disc violet, margins and apex golden. . . *insignicollis* Blkb.
 Prothorax disc green or blue, margins yellow. . . . *garrawillae* n.sp.
221. Apical mark covering apices. 222.
 Preapical mark not extending to apex. 232.
222. Abdomen metallic or dark. 223.
 Abdomen yellow or red. 231.
223. 21 mm. long. *blackburni* Cart.
 15 mm. long or less. 224.
224. Elytra yellow. 225.
 Elytra red. 228.
225. Apices obliquely excised, finely dentate. 226.
 Apices sharply bispinose. 227.
226. Pronotum black, hind margins serrulate. *atricollis* Saund.
 *tripartita* Kerr.
 Pronotum blue. var. *deserti* Blkb.
 Pronotum blue, margins entire. *propinqua* Cart.
227. Form robust, elytral markings green and violet. . . . *macleayi* Blkb.
 Form narrow and attenuate, elytral markings black. . . *bogania* Cart.
228. Ovate, depressed, underside and markings golden green.
 *delectabilis* Hope.
 Narrow, convex, underside and markings blue. 229.
229. Pronotum bronze, sides widely rounded, widest at middle.
 *piliventris* Saund.
 Pronotum blue, sides lightly rounded, widest behind middle
 *vulgaris* Cart.
230. Abdomen, also elytra, yellow. 231.
 Abdomen, also elytra, red. 232.
231. Apices subtruncate. *haswelli* Cart.
 Apices acuminate. *rubriventris* Blkb.
232. Elytral markings blue-black, apices strongly spinose. . *alexandri* Cart.
 Elytral markings bright violet, apices weakly bidentate.
 *mackayana* Cart.
233. Elytra yellow. 234.
 Elytra red, or with red margins. 237.
234. Elytral intervals uniform. 235.
 Alternate intervals subcostate. *alternecosta* Thoms.
 *alacris* Kerr.
 *libens* Kerr.
 *quadrinotata* Blkb.
235. Pronotum widest at base, suture dark. 236.
 Pronotum not widest at base, suture not dark. . . . *generosa* Kerr.
 [Very close to *piliventris*, but ground colour paler, preapical mark not reaching apex, underside less pilose.]
236. Pronotum and underside peacock blue or green. . . . *scalaris* Boisd.
 *cyanicollis* Boisd.
 *crucigera* C. & G.
 *subtrifasciata* C. & G.
 *media* Hope.

- *prudens* Kerr.
 *suavis* Kerr.
 *crucioides* Obenb.
 var. wholly or largely green. *viridis* C. & G.
 Pronotum dark copper, underside blue-black or violet.
 * *atrocoerulea* Kerr.
237. Robust convex, hind margins finely serrulate. *convexa* Cart.
 Narrower, hind margins entire. 238.
238. Prothorax bronze, margins of elytra only red, 11 x 4 mm.
 *rubrocincta* Gehm.
 Prothorax bright green, elytra red, 9 x 3 mm. *filiformis* Blkb.
- (XIV) Elytra as in *kirbyi* group, but premedial fascia bifurcate laterally,
 leaving a yellow spot at margin, sometimes continuous with
 basal zone. (*australasiae* C. & G. group).
239. Prothorax concolorous. 240.
 Prothorax bicolorous. 256.
240. Apical mark extending to, or over, apex. 241.
 Preapical mark not extending to apex. 254.
241. 20 mm. long or more. *insularis* Blkb.
 12-16 mm. long. 242.
 11 mm. long or less. 252.
242. Anterior fork of fascia extending to shoulder, basal and
 marginal spots isolated. 243.
 Anterior fork not extending to shoulder, yellow basal
 zone continuous to margin. 250.
243. Elytral markings cyaneous. 244.
 Elytral markings coppery violet. 247.
244. Apical mark bearing two small yellow spots. *apicenotata* Cart.
 Apical mark without yellow spots. 245.
245. Elytral apices truncate, basal dark border wide, underside coppery. . .
 *rostralis* Cart.
 Elytral apices bispinose, basal dark border narrow,
 underside otherwise. 246.
246. Pronotum black, underside blue, apices strongly bispinose.
 *australasiae* C. & G.
 Pronotum bronze, underside greenish, apices finely spinose.
 (a) *assimilis* Hope.
 (b) *puerilis* Kerr.
 *timida* Kerr.
- [I have not been able to distinguish (a) from (b) but am unwilling to
 state their synonymy.]
247. 15 mm. long, pronotum violet coppery, underside lightly
 pubescent. 248.
 9.5 mm. long, pronotum brownish coppery, underside strongly
 pubescent. *equina* Blkb.
248. Narrower, prothorax convex, hind yellow zone not produced backward
 at margin. *violacea* MacL.
 *obliquefasciata* Obenb.
 Wider, prothorax more explanate, hind yellow zone produced back-
 ward at margin. *cupreoflava* Saund.
249. Elytral markings black, or blue-black. 250.
 Elytral markings coppery. *cupricauda* Saund.
250. Elongate oblong, apices obliquely excised. *browni* Cart.
 Ovate oblong, apices otherwise. 251.

251. Postmedial fascia broken into two spots, apices strongly bispinose. *duaringae* Cart.
Fasciae unbroken, apices finely dentate. *inconspicua* Saund.
252. 9-11 mm. long, basal yellow, in general, connected with 253.
marginal spot. 254.
Basal yellow, not so connected. 254.
253. Pronotum bronze, form ovate. *acuticeps* Saund.
Pronotum blue or green, form narrow, oblong. *odewahni* Obenb.
Pronotum blue or green, form narrow, oblong. *obscura* Saund.
254. 7-10 mm. long, basal yellow connected, or not, with medial yellow
zone. *oblita* n.sp.
6 mm. long, basal yellow spot isolated. *minuta* Blkb.
255. Apices trispinose. *burchelli* C. & G.
Apices otherwise. *hostilis* Blkb. 256.
256. Basal yellow mark isolated. * *yorkensis* Obenb.
Basal yellow mark continuous to margin. *simulata* C. & G.
. *helenae* Hope.
. *lanuginosa* Hope.
. *perplexa* Hope.
. *phryne* Thoms.
. *lais* Thoms.
. *triramosa* Thoms.
. *distinguenda* Thoms.
. *fraterna* Kerr.
- [A very variable species with wide distribution from East to West.
lanuginosa Hope is a common form with red margins, commonly
confused with *burchelli* C. & G. *phryne* Thoms. is a smaller
testaceous form from W.A. (Geraldton) with narrow fasciae and
markings.]
257. Prothorax red with black discal mark. *flavosignata* MacL.
. *circumflexa* Obenb.
. var. *rufosignata* Cart.
Prothorax bronze, margins golden coppery. *cyaista* Rainb.
Prothorax with yellow or red margins. 258.
258. Underside dark. 259.
Underside with yellow areas. 262.
259. Margins of prothorax and elytra, also apex, red. *rufolimbata* Cart.
Margins of prothorax and elytra yellow, apex dark. 260.
260. Margins of elytra entire, lateral spot connected with basal and medial
yellow. *audax* Saund.
Post margins serrulate, lateral spot isolated. 261.
261. Underside strongly pubescent, elytral apical dark area without spots.
. *clarki* Cart.
Underside scarcely pubescent, apical dark area with 2 yellow spots. . .
. *victoriensis* Blkb.
. *sensitiva* Kerr.
. var. *humeralis* Kerr.
. (vide supra 151).
262. Apices bidentate. *eremita* Blkb.
Apices trispinose. *signata* Kerr.
- (XV) Elytra yellow with 3 fasciae and the apex dark.
. *rotundata* Saund. group.
263. Oblong, elytral intervals uniform. 264.

- Shortly obovate, some intervals subcostate, pronotum and elytral markings dark green. *rotundata* Saund.
 var. elytral markings subobsolete. *moribunda* Saund.
 264. Pronotum coppery, elytral markings bronze, 11 x 3 mm.
 *quadrifasciata* Saund.
 Pronotum bright green, elytral markings violet, 7 x 2.5 mm.
 *ariel* Cart.

Hypostigmopera variegata Blkb. [The second example known is a ♂ taken by University Zool. Exp. to Barrington Tops in 1925; now in Macleay Mus.]. This seems to deserve generic distinction, though merged with *Castiarina* by Kerremans. Its pattern suggests *bella* Saund., but there is no red area on the elytra; the apices have two equal teeth.

EXPLANATION OF PLATES.

Plate xxix.

- Figure 1. *Castiarina interstitialis* Cart.
 " 2. " *discoidea* Cart.
 " 3. " *rubicunda* Cart.
 " 4. " *domina* Cart.

Plate xxx.

- Figure 5. *Castiarina aurantiaca* Cart.
 " 6. " *rubella* Cart.
 " 7. " *garrawillae* Cart.
 " 8. " *perlonga* Cart.
 " 9. " *eburnea* Cart.

REVIEW.

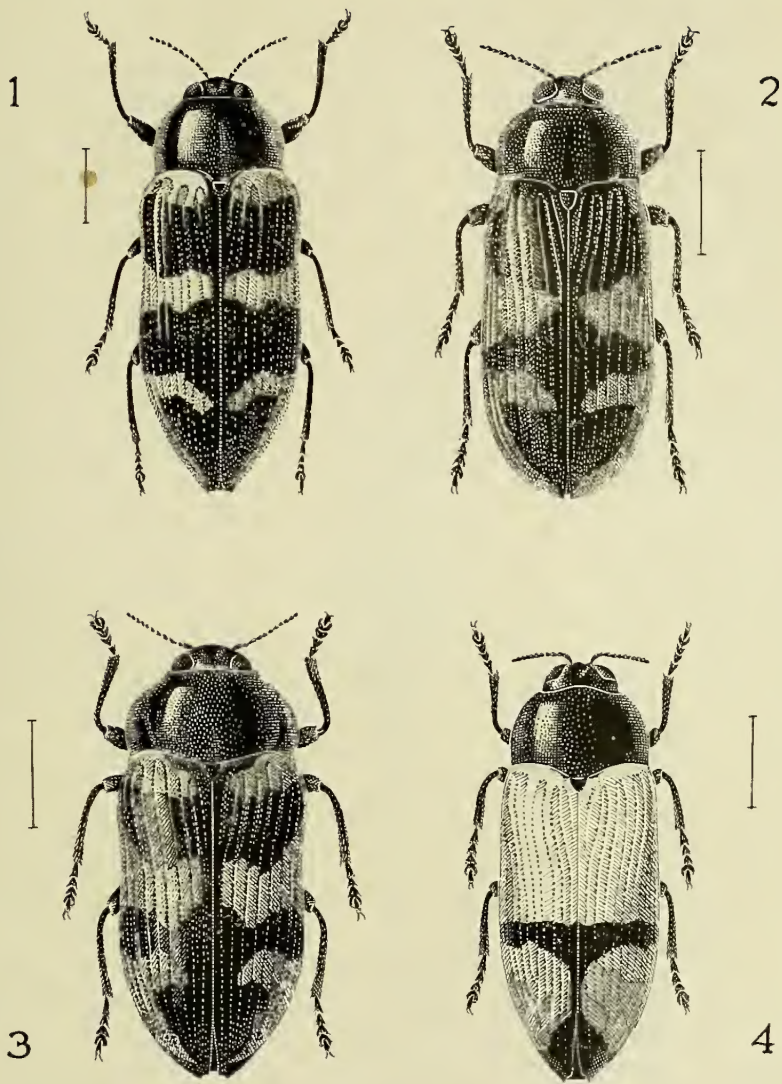
A Check-list of the Fishes recorded from Australia, by (the late) Allan R. McCulloch, in the *Australian Museum Memoir*, v., pt. 1, pp. 1-144, June 29, 1929; pt. ii., pp. 145-329, September 10, 1929; pt. iii., pp. 329-436, November 28, 1929; pt. iv., 1-x.; 437-534, May 26, 1930. Introduction by C. Anderson, Director.

This work, issued by the Trustees of the Australian Museum, is one which should greatly facilitate the study of Ichthyology in Australia.

Prior to his lamented death at Honolulu, the late Allan R. McCulloch had compiled a huge card index of the fishes of the world, comprising some 100,000 entries, and in which he paid especial attention to those species recorded from Australasian and Pacific regions. From this he made a MS. list of fishes recorded from Australian waters. Dr. Anderson has pointed out in his introduction: "It was his earnest desire that, in the event of his death, this list should be published in his name, and it is in fulfilment of this wish that the present Memoir has been issued."

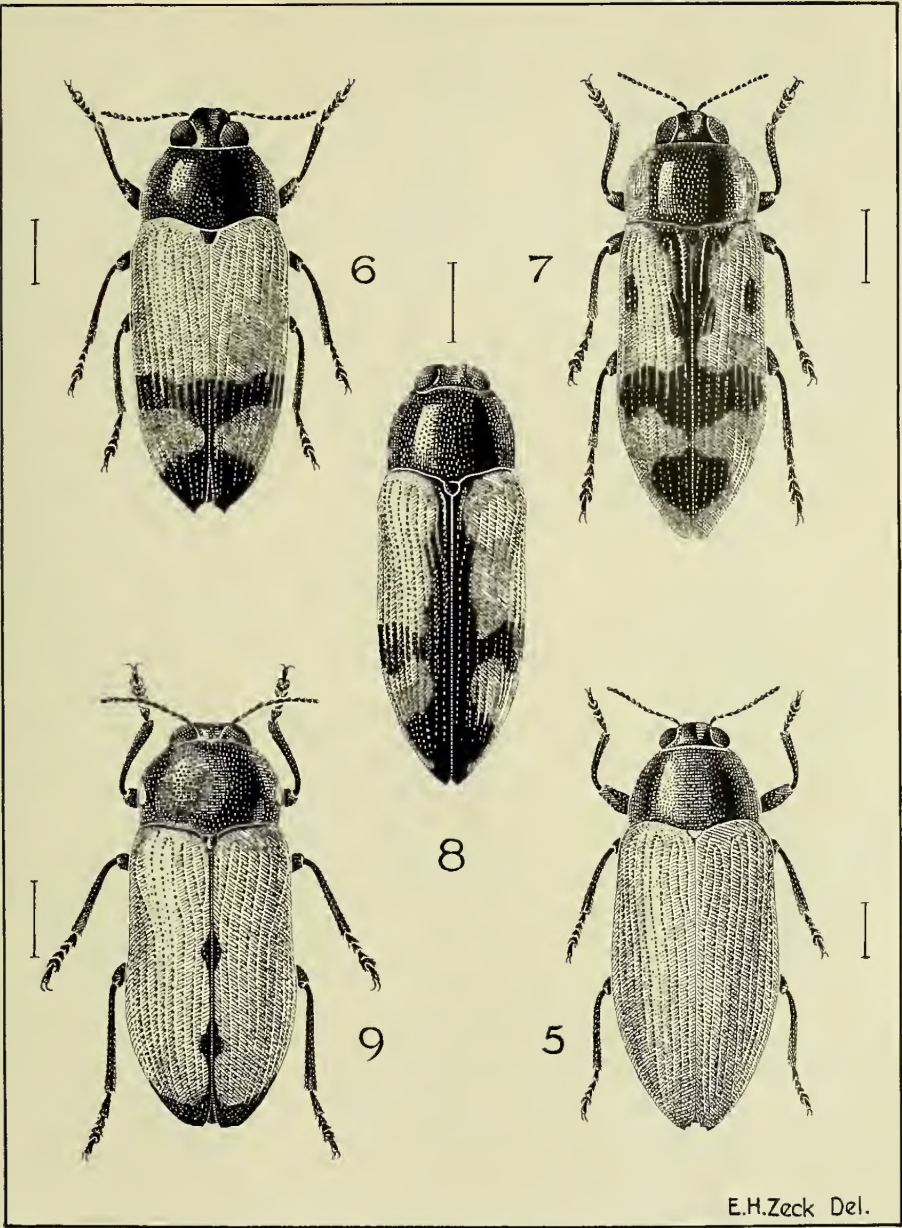
To McCulloch's successor in office, his former assistant, Mr. Gilbert P. Whitley, has fallen the herculean task of the compilation of this Check-list from the card index slips. He has, moreover, unselfishly added to his labours by supplying references, and distribution of the species, instead of adhering to the original scheme of issuing a mere list of names. He is also the author of all the information concerning genotypes, the details of exact dates of publication and the type localities; these greatly enhance the value of McCulloch's Check-list, making it a valuable work of reference for all time. The work reflects in the highest degree upon Whitley's ability as a taxonomic worker, and adds fresh lustre to McCulloch's name.

The work has been produced in a highly creditable manner by The Australasian Medical Publishing Company, Limited, The Glebe, Sydney.



E.H.Zeck Del.

NEW SPECIES OF STIGMODERA (CASTIARINA).



NEW SPECIES OF STIGMODERA (CASTIARINA).